Amendments to the Claims

Please cancel Claims 2, 11 and 13-33 without prejudice or disclaimer of the subject matter recited therein.

Please amend Claims 1, 3-10 and 12 to read as follows.

1.   (Currently Amended)   An image processor ~~equipped with deciding means for deciding formation amounts of a low-density dot and of a high-density dot for a unit area of a printing medium according to a density level of input image data used for printing an image on said printing medium,~~ comprising:

generating means for generating data relating to respective applying amounts of low-concentration ink and high-concentration ink, which has a same color as the low-concentration ink and has a higher concentration than that of the low-concentration ink, based on input image data for printing an image on a printing medium, the low-concentration and high-concentration inks being used for forming low-density dots and high-density dots on a unit area of the printing medium,

wherein said ~~deciding~~ generating means generates the data relating to the respective applying amounts of the low-concentration and the high-concentration inks based on the input image data for printing an image on the printing medium, so that, ~~decides the formation amounts of the low-density dot and of the high-density dot in accordance with said density level in such a way that,~~ within a range from a low gradation level to a high gradation level of colors expressed by the input image data, as ~~said density~~ the gradation level rises, the ~~formation applying~~ amount of ~~said low-density dot~~ the low-concentration ink is gradually increased up to a

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first peak amount and after reaching the first peak amount, gradually decreased, and ~~in a range of~~

~~density levels higher than a predetermined density level at which the low-density dot is formed in~~

~~the specified amount,~~ as ~~said density~~ the gradation level rises from a gradation level

corresponding to the first peak amount or from a predetermined gradation level lower than the

gradation level corresponding to the first peak amount, the ~~formation~~ applying amount of ~~said~~

~~high-density dot~~ the high-concentration ink is gradually increased up to a second peak amount

~~smaller~~ lower than ~~said~~ the first peak amount, and

wherein the number of levels of gradation represented by the dots of the unit

area based on the data relating to the applying amount of the low-concentration ink is greater

than the number of levels of gradation represented by the dots of the unit area based on the data

relating to the applying amount of the high-concentration ink.

Claim 2 (Canceled).

3.   (Currently Amended)   An image processor according to ~~either of~~ claim

1 ~~or claim 2~~, wherein the ~~formation~~ applying amount of ~~said low-density dot~~ the low-

concentration ink at ~~said~~ the predetermined ~~density~~ gradation level ~~at which the formation of said~~

~~high-density dot is started~~ is 2 or more times ~~said~~ the second peak amount.

4.   (Currently Amended)   An image processor according to ~~either of~~ claim 1 ~~or claim 2~~, wherein the ~~formation~~ applying amount of ~~said low-density dot~~ the low-concentration ink at ~~said~~ the predetermined ~~density~~ gradation level ~~at which the formation of said high-density dot is started~~ is 1.75 or more times ~~said~~ the second peak amount.

5.   (Currently Amended)   An image processor according to ~~either of~~ claim 1 ~~or claim 2~~, wherein ~~said~~ the first peak amount ~~which is the maximum formation amount of said low-density dot for said unit are~~ is ~~set to~~ 1.75 or more times ~~said~~ the second peak amount ~~which is the maximum formation amount of said high-density dot for said unit area~~.

6.   (Currently Amended)   An image processor according to ~~either of~~ claim 1 ~~or claim 2~~, wherein ~~said~~ the first peak amount ~~which is the maximum formation volume of said low-density dot for said unit are~~ is ~~set to~~ 2 or more times ~~said~~ the second peak amount ~~which is the maximum formation volume of said high-density dot for said unit area~~.

7.   (Currently Amended)   An image processor according to ~~either of~~ claim 1 ~~or claim 2~~, wherein said ~~deciding~~ generating means ~~decides~~ generates the data corresponding to the number of ~~said~~ the low-density dots and the number of ~~said~~ the high-density dots, both of which ~~area~~ are to be formed for ~~said~~ the unit area in accordance with ~~said density~~ the gradation level.

8.   (Currently Amended)   An image processor according to claim 7, wherein the number of ~~said~~ the low-density dots that are formed for ~~said~~ the unit area at the ~~density~~ gradation level that corresponds to ~~said~~ the first peak amount is 1.75 or more times the number of ~~said~~ the high-density dots that are formed for ~~said~~ the unit area at the ~~density~~ gradation level that corresponds to ~~said~~ the second peak amount.

9.   (Currently Amended)   An image processor according to claim 1, wherein ~~a density level whose~~ a granularity G of the image by ~~the~~ a granularity evaluation function ~~becomes not more than 0.6~~ is set to be 0.6 or less than 0.6, the image corresponding to respective gradation levels in the range from the predetermined gradation level to the gradation level corresponding to the second peak amount ~~as said predetermined density level at which the formation of said high-density dot is started~~, and

said the granularity evaluation function for evaluating the granularity G that is the standard deviation of the pixel values in ~~the~~ an image P' that was obtained by putting ~~the~~ an image P through a visual filter being expressed by the following expression[[;]]:

$$G = \left\{ 1 / \left(N^2 - 1 \right) \sum_{i,j=1}^{N} \left(P'ij - \overline{P} \right)^2 \right\}^{1/2}$$

$$\overline{P} = 1 / N^2 \sum_{i,j=1}^{N} P'ij$$

$$P'ij = IFFT \left\{ FFT(P'ij) \sum V(f) \right\}$$

$$V(f) = \begin{cases} 5.05e^{-0.138f} \left(1 - e^{-0.1f} \right) : f \geq 5 \\ 1 \qquad\qquad\qquad\quad : f < 5 \end{cases}$$

where i is a pixel position in <u>an</u> X direction, j is a pixel position in <u>a</u> Y direction, and N is a size of the image P in <u>the</u> X direction and in <u>the</u> Y direction.

10.   (Currently Amended)   An image processor according to claim 9, wherein ~~a density level whose~~ <u>the</u> granularity G <u>of the image</u> by the ~~said~~ <u>granularity</u> evaluation function ~~becomes not more than 0.6~~ is set <u>to be 0.4 or less than 0.4, the image corresponding to respective gradation levels in the range from the predetermined gradation level to the gradation level corresponding to the second peak amount</u> ~~as said predetermined density level at which the formation of said high-density dot is started~~.

Claim 11 (Canceled).

12.   (Currently Amended)   An image processing method ~~that decides formation amounts of a low-density dot and of a high-density dot for a unit area of a printing medium in accordance with a density level of the input image data used for printing an image on said printing medium, wherein~~ <u>comprising:</u>

    <u>a generating step of generating data relating to respective applying amounts of low-concentration ink and high-concentration ink, which has a same color as the low-concentration ink and has a higher concentration than that of the low-concentration ink, based on input image data for printing an image on a printing medium, the low-concentration and high-concentration inks being used for forming low-density dots and high-density dots on a unit area of the printing medium,</u>

wherein said generating step generates the data relating to the respective applying amounts of the low-concentration and the high-concentration inks based on the input image data for printing an image on the printing medium, so that, within a range from a low gradation level to a high gradation level of colors expressed by the input image data, as the gradation level rises, the applying amount of the low-concentration ink is gradually increased up to a first peak amount and after reaching the first peak amount, gradually decreased, and as the gradation level rises from a gradation level corresponding to the first peak amount or from a predetermined gradation level lower than the gradation level corresponding to the first peak amount, the applying amount of the high-concentration ink is gradually increased up to a second peak amount lower than the first peak amount, and

wherein the number of levels of gradation represented by the dots on the unit area based on the data relating to the applying amount of the low concentration ink is greater than the number of levels of gradation represented by the dots of the unit area based on the data relating to the applying amount of the high-concentration ink.

~~the formation amounts of the low-density dot and of the high-density dot are decided in such a way that, as said density level rises, the formation amount of said low-density dot is gradually increased up to the first peak amount and, after reaching the first peak amount, gradually decreased, and in a range of density levels higher than a predetermined density level at which the low-density dot is formed in specified amount, as said density level rises, the formation amount of said high-density dot is gradually increased up to a second peak amount smaller than said first peak amount.~~

Claims 13-33 (Canceled).